Claims:

1. A method for electroplating a metal onto a substrate plating surface, comprising:

holding a substrate with the substrate plating surface face-up on a rotatable substrate support member having means for holding and rotating the substrate during an electroplating process;

positioning an anode above the substrate plating surface;

flowing an electroplating solution between the anode and the substrate plating surface; and

applying a plating bias between the substrate plating surface and the anode to electroplate the metal onto the plating surface.

2. The method of claim 1 wherein the step of holding the substrate comprises providing a vacuum suction between the substrate support member and a back side of the substrate.

3. The method of claim 1, wherein the step of holding the substrate further comprises providing a peripheral seal between the substrate support member and a back side of the substrate.

4. The method of claim 1, wherein applying a plating bias comprises positioning a cathode contact ring in electrical contact with the plating surface, the cathode contact ring defining a fluid processing volume between the ring and the substrate surface.

5. The method of claim 4, wherein the cathode contact ring contacts the plating surface annular ring and a plurality of contact pins extending radially inwardly therefrom, and positioning an annular seal radially inward of the contact pins.

6. The method of claim 1, wherein the electroplating solution flows through perforations in the anode.

7. The method of claim 1, wherein the anode is consumed during the operation of the electroplating method.

8. The method of claim 1, further comprising rotating the substrate while flowing the electroplating solution between the anode and the substrate plating surface.

9. The method of claim 1, further comprising vibrating the substrate while flowing the electroplating solution between the anode and the substrate plating surface.

10. The method of claim 4, wherein flowing the electroplating solution further comprises filling the fluid processing volume.

11. The method of claim 10, wherein the positioning the anode further comprises positioning the anode in electrical communication with the fluid processing volume.

12. The method of claim 4, further comprising removing the cathode contact ring and rinsing the substrate plating surface with a rinse agent.

13. The method of claim 12, wherein the step of rinsing the substrate plating surface comprises spraying a rinse agent over the substrate plating surface while rotating the substrate support within.

14. The method of claim 12, further comprising draining the rinse agent back to a rinse agent reservoir.

15. The method of claim 12, further comprising purifying the rinse agent in a purifier.

16. The method of claim 12, further comprising spin-drying the substrate.

17. The method of claim 1, further comprising supplying the electroplating solution into a cavity ring disposed above the anode.

18. The method of claim 17, further comprising moving the cavity ring while flowing the electroplating solution.

19. A method for electroplating a metal onto a substrate plating surface, comprising:

positioning the substrate plating surface face-up on a support member;

positioning the support member at a first vertical position in a processing cell;

electrically contacting a cathode clamp ring to the substrate plating surface;

flowing an electroplating solution from an anode to the substrate plating surface while rotating the substrate plating surface at the first vertical position;

positioning the support member at a second vertical position in the cell, the second position being different from the first position; and

rinsing the substrate plating surface with a rinse agent at the second vertical position.

20. The method of claim 19, further comprising spin-drying the substrate plating surface.

21. The method of claim 19, further comprising draining the electroplating solution to an electroplating solution reservoir.

22. The method of claim 19, further comprising draining the rinse agent to a rinse drain and purifying the rinse agent.

23. A method for plating and rinsing a substrate in a processing cell, comprising:

positioning the substrate face-up on a rotatable substrate support member and positioning the substrate support member at a plating position in the cell;

electrically contacting a plating surface of the substrate with a cathode electrode;

forming a fluid processing volume above the plating surface;

positioning an anode in electrical communication with the processing volume;

applying a plating bias between the anode and the cathode electrode to plate a metal from the fluid processing volume onto the plating surface in the plating position;

moving the substrate support member to a rinsing position; and

dispensing a rinsing solution onto the plating surface while rotating the substrate.

24. The method of claim 23, further comprising capturing a plating solution used in the plating process with a first fluid receiving member and capturing the rinsing solution with a second fluid receiving member.

25. The method of claim 23, wherein electrically contacting the plating surface comprises positioning a cathode contact ring having a plurality of radially positioned substrate contact pins positioned thereon such that the contact pins electrically engage a perimeter of the substrate.

26. The method of claim 25, further comprising sealably engaging the perimeter of the plating surface with an annular seal positioned radially inward of the contact pins.

27. The method of claim 23, further comprising flowing an electroplating solution through a plurality of perforations in the anode to fill the fluid processing volume.